FIG. 1

FIG. 2

HOST PROCESSOR NODE

CONSUMER 202   CONSUMER 204   CONSUMER 206   ∘∘∘   CONSUMER 208

224 — MESSAGE AND DATA SERVICE   222

200

— — — — — — — — — — VERBS — — — — — — — — — —

CHANNEL ADAPTER (ENDNODE)

PORT   ∘∘∘   PORT

214   210   216

CHANNEL ADAPTER (ENDNODE)

PORT   ∘∘∘   PORT

218   212   220

FIG. 3

302 304   MEMORY   310   340   300

QP   QP   QP   QP   ∘∘∘   QP

CHANNEL ADAPTER

SMA
336

306 DMA 308

340   TRANSPORT   338 — MTP

318   320   322   324   326   328   330   332   334

VL   VL   ∘∘∘   VL   VL   VL   ∘∘∘   VL   VL   VL   ∘∘∘   VL

PORT   PORT   ∘∘∘   PORT

312   314   316

FIG. 7

BEGIN

700 — SET P_Keys IN NODE

702 — PERFORM OTHER CONFIGURATION PROCESSES TO CONFIGURE THE NODE

END

FIG. 4

DATA SEGMENT 1 ~444

DATA SEGMENT 2 ~446

DATA SEGMENT 3 ~448

DATA SEGMENT 4 ~438

DATA SEGMENT 5 ~440

DATA SEGMENT 6 ~442

400

CONSUMER 406

WORK REQUEST 410

WORK REQUEST 412

WORK COMPLETION 414

RECEIVE WORK QUEUE

WQE	WQE	WQE	WQE
416	418	419	420

SEND WORK QUEUE

WQE	WQE	WQE	WQE
422	424	426	428

402

COMPLETION QUEUE

CQE	CQE	CQE	CQE
430	432	434	436

404

HARDWARE ~408

FIG. 5

MESSAGE DATA

502

DATA SEGMENT 1	DATA SEGMENT 2	DATA SEGMENT 3
504	506	508

510 — PACKET

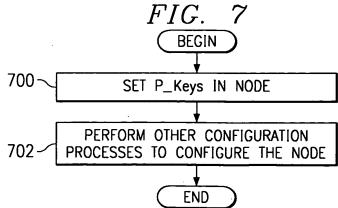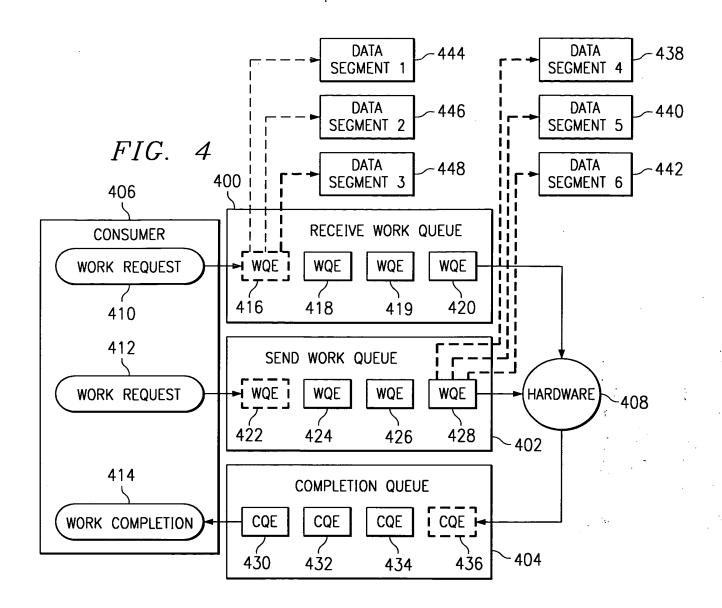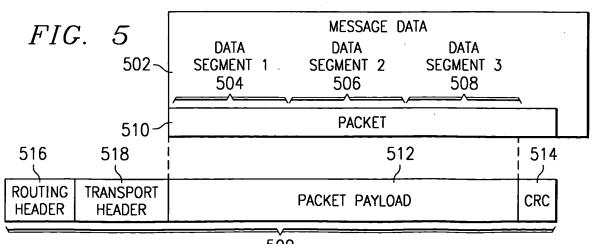| 516	518	512	514
ROUTING HEADER	TRANSPORT HEADER	PACKET PAYLOAD	CRC

500
DATA PACKET (ROUTED UNIT OF WORK)

FIG. 6

FIG. 8

BEGIN

800 — RECEIVE PACKET

802 — EXTRACT P_Key FROM PACKET

804 — COMPARE EXTRACTED P_Key WITH P_Key IN NODE

806 — MATCH?

— YES → PROCESS PACKET — 818

— NO

808 — SAVE HEADER INFORMATION FROM PACKET

810 — PACKET IS DROPPED WITHOUT RESPONSE

820 — RETURN RESPONSE TO SOURCE OF PACKET

812 — COUNTER AT MAXIMUM VALUE?

— YES

— NO

814 — INCREMENT COUNTER

816 — REPORT VIOLATION TO SUBNET MANAGER OR SAVE INFORMATION AWAITING SUBNET MANAGER POLL OPERATION

END